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Chervitz

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(54) **MUSICAL INSTRUMENT**

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(51) **Int. Cl.**
G10D 7/02 (2006.01)

(52) **U.S. Cl.**
CPC ***G10D 7/02*** (2013.01)

(58) **Field of Classification Search**
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USPC ..... 84/330, 380 R
See application file for complete search history.

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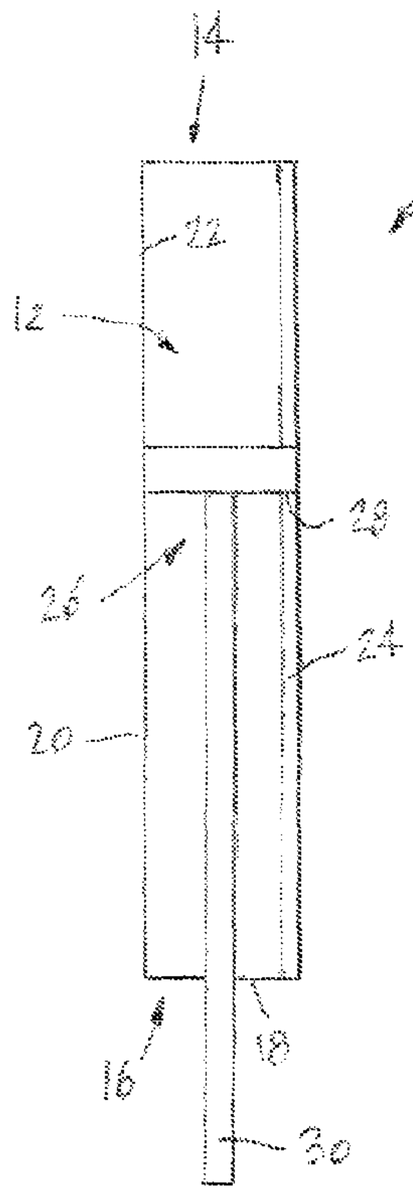
(57) **ABSTRACT**

A musical instrument is disclosed which comprises a tubular member having an inlet end, an outlet end having a circumferential lip, an exterior surface; and an interior surface having a rib, a movable stopper member having an indentation and a rod connected to the movable stopper member, the movable stopper member and the rod for insertion within the tubular member and the movable stopper member movable between the inlet end and the circumferential lip of the tubular member along the rib.

19 Claims, 6 Drawing Sheets



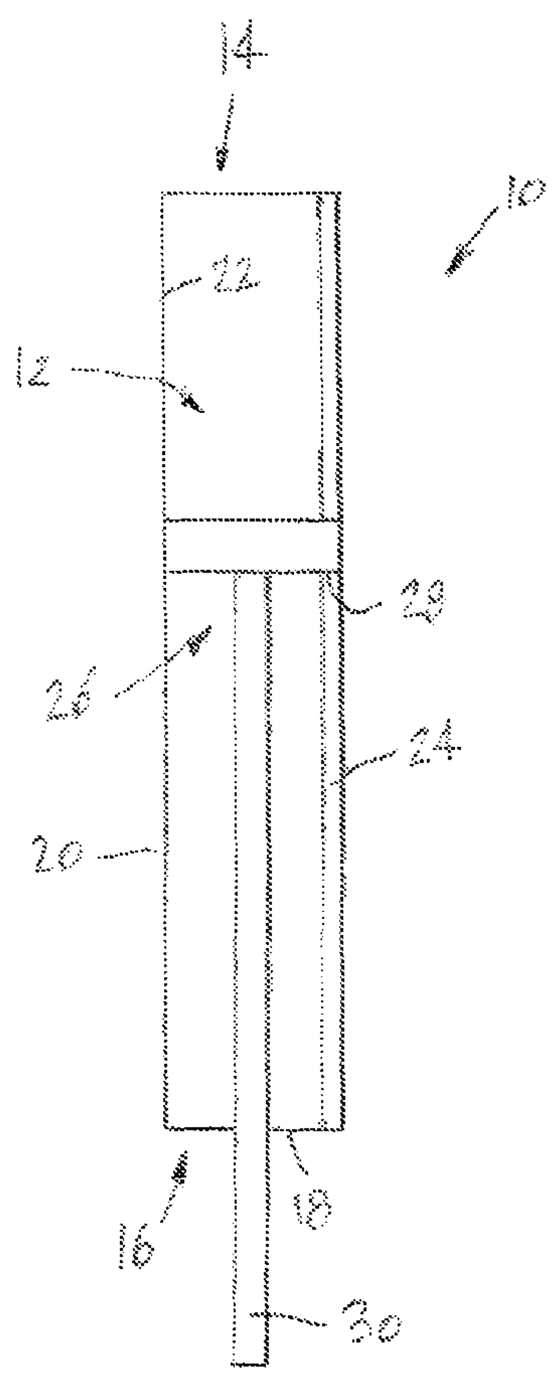


FIG. 1

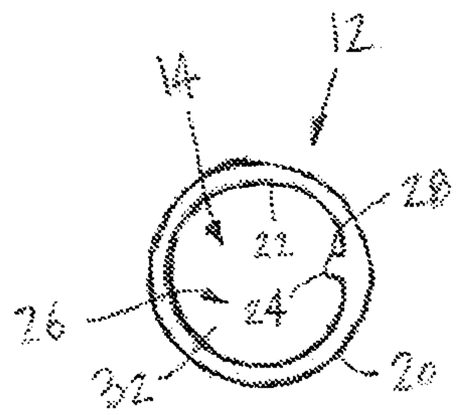


FIG. 2

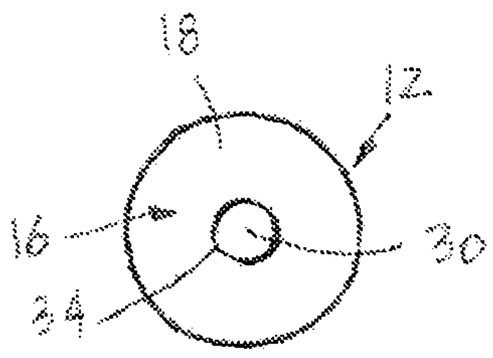


FIG. 3

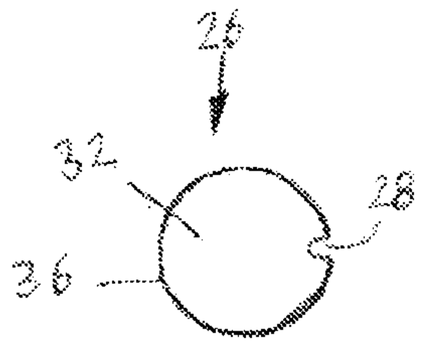


FIG. 4

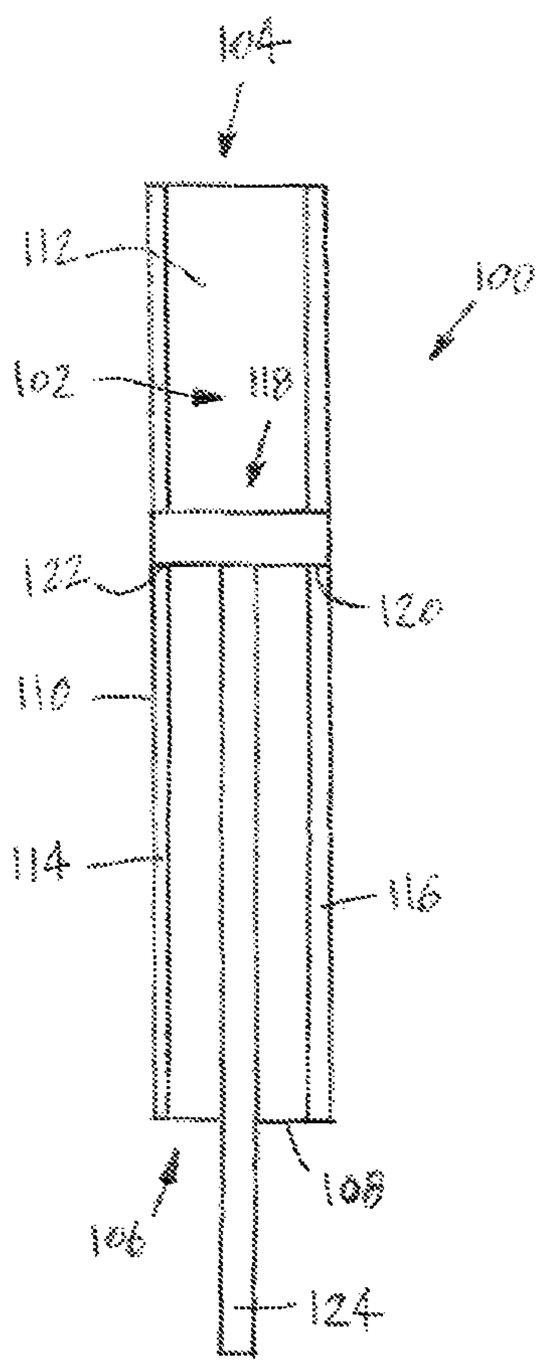


FIG. 5

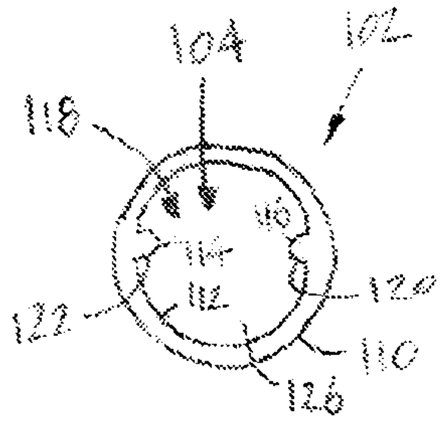


FIG. 6

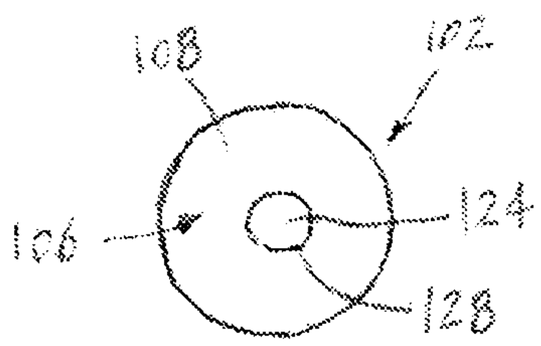


FIG. 7

116

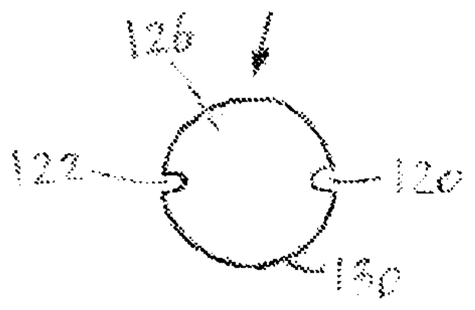
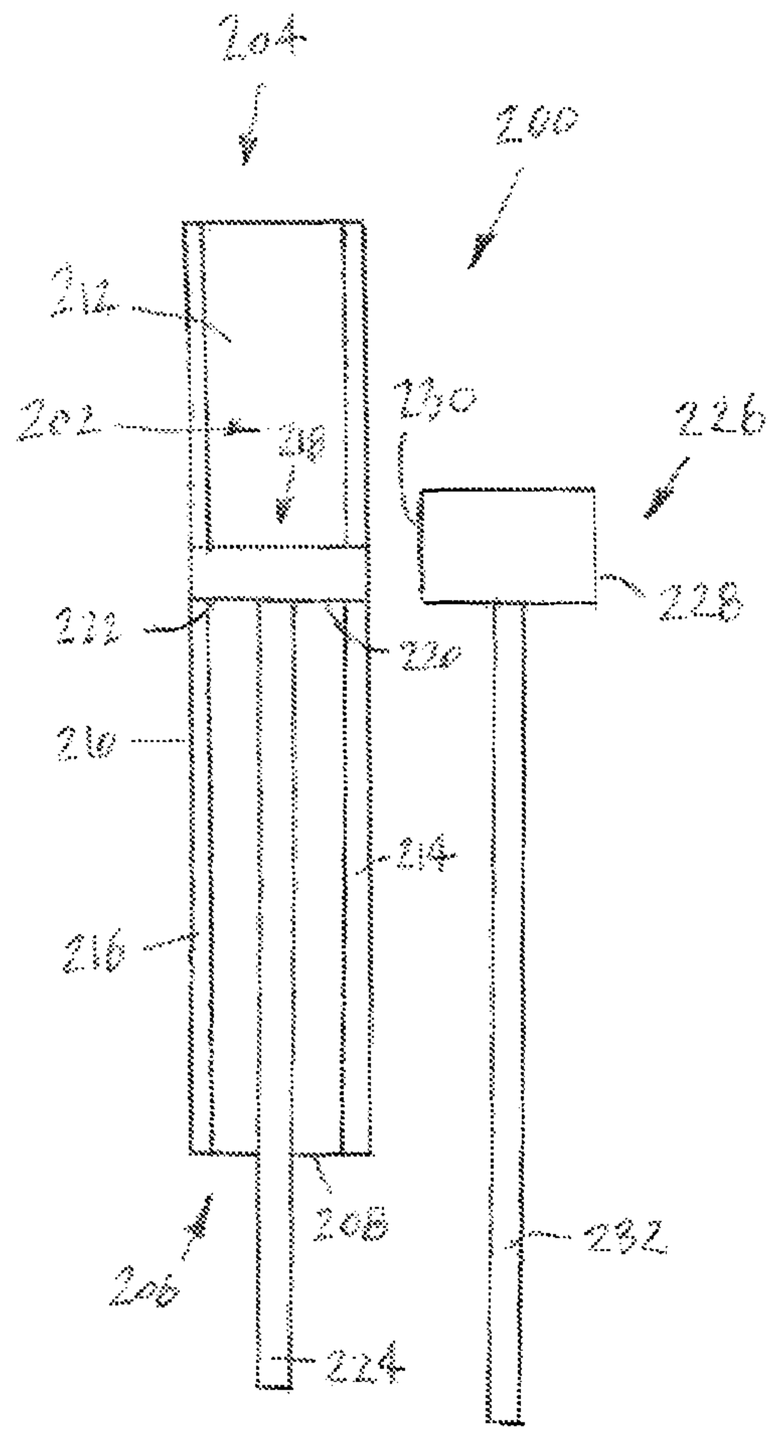


FIG. 8


204
200
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202
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226
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224
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FIG. 9

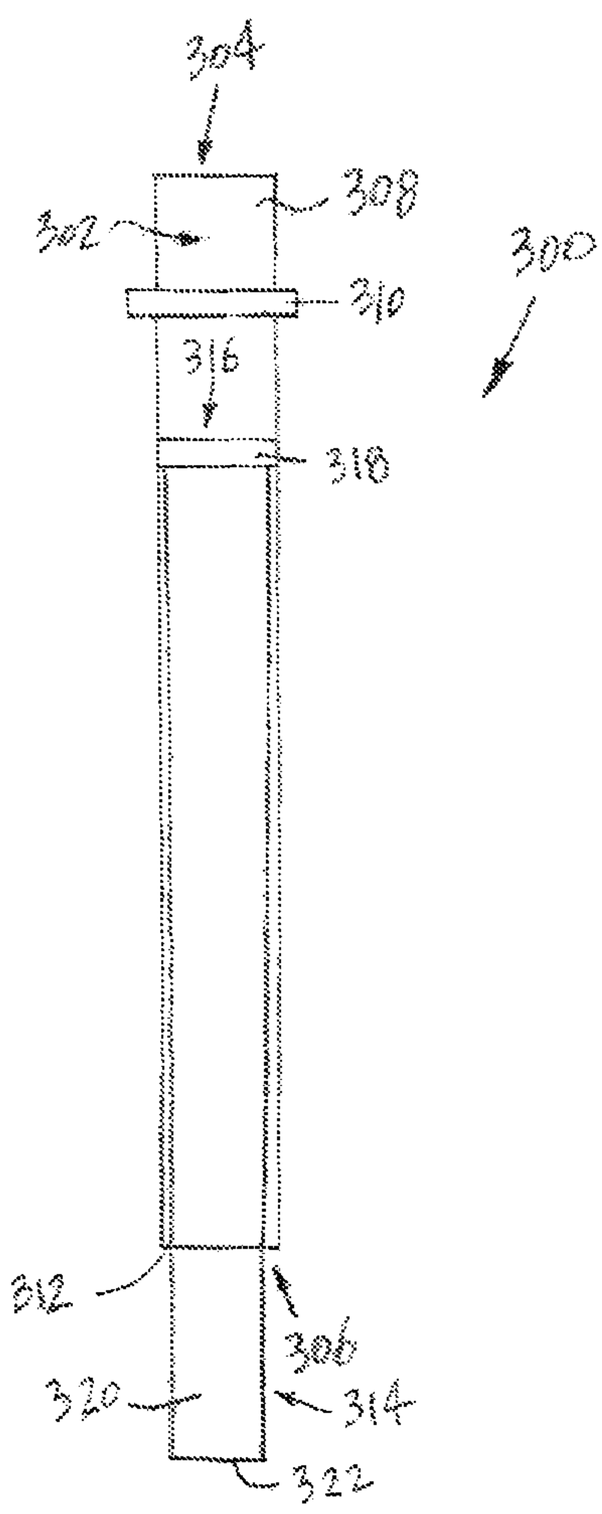

FIG. 10

MUSICAL INSTRUMENT

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of U.S. patent application Ser. No. 13/853,736 filed on Mar. 29, 2013, now U.S. Pat. No. 9,105,258.

BACKGROUND

This disclosure relates generally to a musical instrument, and more particularly to a musical instrument that uses a fluid such as air to assist in generating various musical notes or tones.

Musical instruments, such as percussion instruments, wind instruments, and string instruments, are well known. In particular, musical instruments operate by producing a vibration that can be perceived by a human ear as an audible sound and interpreted as a musical note or composition. In order to produce a musical note, the musical instrument must be able to produce a vibration and sometimes amplify the vibration. All musical instruments have a sound generating mechanism that is capable of producing musical notes. For example, a drum head may be struck to produce a vibration or a string may be plucked to produce a vibration. Although such instruments are known, learning how to play and master such instruments can be a time consuming and frustrating endeavor. Further, some musical instruments are very large and are difficult to move from location to location. This may reduce the ability of a musician to practice the instrument. Other musical instruments are very expensive and may not be rented due to their expense. The expense of the instrument may hinder a musician from learning to play the instrument. In view of this, there is always a need to develop a musical instrument that is easy to learn how to play, inexpensive, and of a compact design.

The present disclosure is designed to obviate and overcome many of the disadvantages and shortcomings experienced with prior musical instruments. Moreover, the present disclosure is related to a musical instrument that can be easily manipulated or played to produce various musical notes. The musical instrument of the present disclosure is also simple to learn how to play due to the size of the musical instrument and the nature of the musical instrument.

SUMMARY

In one form of the present disclosure, a musical instrument is disclosed which comprises a tubular member having an inlet end, an outlet end having a circumferential lip, an exterior surface; and an interior surface having a rib, a movable stopper member having an indentation and a rod connected to the movable stopper member, the movable stopper member and the rod for insertion within the tubular member and the movable stopper member movable between the inlet end and the circumferential lip of the tubular member along the rib.

In another form of the present disclosure, a musical instrument comprises a tubular member having an inlet end, an outlet end having a circumferential lip, an exterior surface; and an interior surface having a first rib and a second rib, and a movable stopper member having a first indentation, a second indentation, and a rod connected to the movable stopper member, the movable stopper member and the rod for insertion within the tubular member and the movable stopper member movable between the inlet end and the circumferential lip of the tubular member along the first rib and the second rib.

In still another form of the present disclosure, a musical instrument comprises a tubular member having an inlet end, an outlet end having a circumferential lip, an exterior surface; and an interior surface having a rib, a first movable stopper member having a first thickness, an indentation formed therein, and a rod connected to the first movable stopper member, the first movable stopper member and the rod for insertion within the tubular member and the first movable stopper member movable between the inlet end and the circumferential lip of the tubular member along the rib, and a second movable stopper member having a second thickness, an indentation formed therein, and a rod connected to the second movable stopper member, the second movable stopper member and the rod for insertion within the tubular member and the second movable stopper member movable between the inlet end and the circumferential lip of the tubular member along the rib, the thickness of the first movable stopper member being greater than the thickness of the second movable stopper member.

In yet another form of the present disclosure, a musical instrument is provided which comprises an outer tubular member having an inlet end, an outlet end, an exterior surface; and an interior surface and an inner tubular member having a top end having a stopper member, an exterior surface, and a lower end, with the inner tubular member being inserted into the outer tubular member and the inner tubular member and the stopper member being movable relative to the outer tubular member.

In light of the foregoing comments, it will be recognized that the musical instrument of the present disclosure is of simple construction and design and which can be easily employed with highly reliable results.

The present disclosure provides a musical instrument that has an inner tubular member that can be displaced relative to an outer tubular member that is operable to produce various musical notes or sounds.

The present disclosure provides a musical instrument that is capable of generating various musical sounds to provide a wide variety of musical notes or compositions.

The present disclosure provides a musical instrument that is lightweight and compact.

The present disclosure also provides a musical instrument that has one moving part which is used to generate musical notes.

The present disclosure further provides a musical instrument that is compact and may easily be carried, stored, transported, inventoried, and operated.

The present disclosure provides a musical instrument that can be constructed using readily available materials.

The present disclosure also provides a musical instrument that is inexpensive.

These and other advantages of the present disclosure will become apparent after considering the following detailed specification in conjunction with the accompanying drawings, wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a cross-sectional view of a musical instrument constructed according to the present disclosure;

FIG. **2** is a top view or inlet end view of the musical instrument constructed according to the present disclosure;

FIG. **3** is a bottom view or an outlet end view of the musical instrument constructed according to the present disclosure;

FIG. **4** is a top view of a movable stopper member removed from the musical instrument;

FIG. **5** is a cross-sectional view of another preferred embodiment of a musical instrument constructed according to the present disclosure;

FIG. **6** is a top view or inlet end view of the musical instrument shown in FIG. **4**;

FIG. **7** is is a bottom view or outlet end view of the musical instrument shown in FIG. **4**;

FIG. **8** is top view of a movable stopper member removed from the musical instrument;

FIG. **9** is a perspective view of another embodiment of a musical instrument constructed according to the present disclosure; and

FIG. **10** is a perspective view of still another embodiment of a musical instrument constructed according to the present disclosure.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, wherein like numbers refer to like items, number **10** identifies a preferred embodiment of a musical instrument constructed according to the present disclosure. Referring now to FIG. **1**, the musical instrument **10** is shown to comprise a tubular member **12** having an inlet end **14**, an outlet end **16** having a circumferential lip **18**, an exterior surface **20**, and an interior surface **22** having a rib **24** that extends between the inlet end **14** and the lip **18**. Although the rib **24** is shown as extending between the inlet end **14** and the lip **18**, it is possible that the rib **24** may only extend along a portion of the interior surface **22** of the tubular member **12**. Inserted into the tubular member **12** is a movable stopper member **26** having an indentation **28** and a rod **30** connected to the movable stopper member **26**. The movable stopper member **26** and the rod **30** are adapted for movement within the tubular member **12** between the inlet end **14** and the circumferential lip **18**. The indentation **28** moves or rides along the rib **24** and acts as a guide for keeping the movable stopper member **26** centered within the tubular member **12**. The musical instrument **10** may be operated or played by blowing air into the inlet end **14** and moving the movable stopper member **26**. In particular, the movable stopper member **26** may be moved relative to the tubular member **12** and a player may blow air by or into the inlet end **14** to produce a musical note. By holding the rod **30** to move the movable stopper member **26** within the tubular member **12** various other musical notes may be generated or produced. The circumferential lip **18** acts as a stop to prevent the movable stopper member **26** from being removed from the tubular member **12** through the outlet end **16**. Another hand may be used to hold the tubular member **12** about the exterior surface **20**.

The tubular member **12** has a length and the rod **30** has a length. Typically, the length of the tubular member **12** is shorter than the length of the rod **30**. This allows the rod **30** to extend out of the outlet end **16** of the tubular member **12**. This also provides for easy grasping or handling of the rod **30** relative to the tubular member **12** so that the movable stopper member **26** can be positioned or moved within the tubular member **12** to play different notes.

FIG. **2** illustrates the inlet end **14** of the tubular member **12** and the movable stopper member **26** in the tubular member **12**. The tubular member **12** has the inlet end **14**, the exterior surface **20**, and the interior surface **22**. The interior surface **22** has the rib **24** thereon and the rib **24** is shown having a semicircular cross-section. The movable stopper member **26** has a top **32** and the indentation **28**. The indentation **28** is shown being semicircular in shape and is complementary to the rib **24** so that the indentation **28** slides along the rib **24**. Although the rib **24** and the indentation **28** are shown as being semicircular in shape, other shapes are possible and contemplated. By way of example only, an oval shape, a square shape, or a rectangular shape may be employed so long as the shapes are complementary and allow the indentation **28** to slide along or be guided by the rib **24**.

Referring now to FIG. **3**, the outlet end **16** of the tubular member **12** and the rod **30** are shown. The outlet end **16** has the circumferential lip **18** and an opening **34** through which the rod **30** passes. The circumferential lip **18** acts as a stop to prevent the movable stopper member **26** from exiting the tubular member **12**. This allows for continuous use of the instrument **10** without any concern of the movable stopper member **26** falling out of the instrument **10**. The tubular member **12** has the exterior surface **20** which is used to be grasped by one hand of a user of the instrument **10** while another hand is used to grasp the rod **30** to control movement of the movable stopper member **26**.

FIG. **4** depicts a top view of the movable stopper member **26**. The movable stopper member **26** has the top **32** with the indentation **28** formed therein. The stopper member **26** has an exterior circumferential surface **36** that is adapted to contact the interior surface **22** of the tubular member **12**. The movable stopper member **26** also has a diameter that is less than the diameter of the interior surface **22** of the tubular member **12**. In this manner, the stopper member **26** is frictionally engaged with the interior surface **22** of the tubular member **12**.

With particular reference now to FIG. **5**, another embodiment of a musical instrument **100** constructed according to the present disclosure is shown. The musical instrument **100** is shown to comprise a tubular member **102** having an inlet end **104**, an outlet end **106** having a circumferential lip **108**, an exterior surface **110**, and an interior surface **112** having a first rib **114** and a second rib **116**. Both of the ribs **114** and **116** extend between the inlet end **104** and the lip **108**. Inserted into the tubular member **102** is a movable stopper member **118** having a first indentation **120**, a second indentation **122**, and a rod **124** connected to the movable stopper member **118**. The movable stopper member **118** and the rod **124** are adapted for movement within the tubular member **102** between the inlet end **104** and the circumferential lip **108**. The indentations **120** and **122** move or ride along the ribs **114** and **116**. The ribs **114** and **116** act as guides for keeping the movable stopper member **118** centered within the tubular member **102**. The musical instrument **100** may be operated or played by blowing air into the inlet end **104** and moving the movable stopper member **118** in an up and down fashion. In particular, the movable stopper member **118** may be moved relative to the tubular member **102** and a player may blow air by or into the inlet end **104** to produce a musical note. By holding the rod **124** to move the movable stopper member **118** within the tubular member **102** various musical notes may be generated or produced. The circumferential lip **108** acts as a stop to prevent the movable stopper member **118** from being removed from the tubular member **102** through the outlet end **106**. Another hand may be used to hold the tubular member **102** about the exterior surface **110**.

The tubular member **102** has a length and the rod **124** has a length. Typically, the length of the tubular member **102** is shorter than the length of the rod **124**. This allows the rod **124** to extend out of the outlet end **106** of the tubular member **102** where the rod **124** can be grasped by a hand of an individual. This also provides for easy grasping or handling of the rod **124** relative to the tubular member **102** so that the movable stopper member **118** can be positioned or moved within the tubular member **102** to play different notes.

FIG. **6** illustrates the inlet end **104** of the tubular member **102** and the movable stopper member **118** in the tubular member **102**. The tubular member **102** has the inlet end **104**, the exterior surface **110**, and the interior surface **112**. The interior surface **112** has the first rib **114** and the second rib **116** thereon and the ribs **114** and **116** are each shown having a semicircular cross-section. The movable stopper member **118** has a top **126** and the indentations **120** and **122**. The indentations **120** and **122** are each shown being semicircular in shape and are complementary to the ribs **114** and **116** so that the indentations **120** and **122** slide along the ribs **114** and **116**, respectively. Although the ribs **114** and **116** and the indentations **120** and **122** are shown as being semicircular in shape, other shapes are possible and contemplated. By way of example only, an oval shape, a square shape, or a rectangular shape may be employed so long as the shapes are complementary and allow the indentations **120** and **122** to slide along or be guided by the ribs **114** and **116**.

Referring now to FIG. **7**, the outlet end **106** of the tubular member **102** and the rod **124** are shown. The outlet end **106** has the circumferential lip **108** and an opening **128** through which the rod **124** passes. The circumferential lip **108** acts as a stop to prevent the movable stopper member **118** from exiting the tubular member **102**. This allows for continuous use of the instrument **100** without any concern that the movable stopper member **118** will fall or slide out of the instrument **100**. The tubular member **102** has the exterior surface **110** which is used to be grasped by one hand of a user of the instrument **100** while another hand is used to grasp the rod **124** to control movement of the movable stopper member **118**.

FIG. **8** depicts a top view of the movable stopper member **118**. The movable stopper member **118** has the top **126** with the indentations **120** and **122** formed therein. The stopper member **118** has an exterior circumferential surface **130** that is adapted to contact the interior surface **112** of the tubular member **102**. The movable stopper member **118** also has a diameter that is less than the diameter of the interior surface **112** of the tubular member **102**. In this manner, the stopper member **118** is frictionally engaged with the interior surface **112** of the tubular member **102**.

With reference to FIG. **9**, another embodiment **200** of the musical instrument is shown. The musical instrument **200** is shown to comprise a tubular member **202** having an inlet end **204**, an outlet end **206** having a circumferential lip **208**, an exterior surface **210**, and an interior surface **212** having a first rib **214** and a second rib **216**. Both of the ribs **214** and **216** extend between the inlet end **204** and the lip **208**. Inserted into the tubular member **202** is a first movable stopper member **218** having a first indentation **220**, a second indentation **222**, and a rod **224** connected to the first movable stopper member **218**. The first movable stopper member **218** and the rod **224** are adapted for movement within the tubular member **202** between the inlet end **204** and the circumferential lip **208**. The indentations **220** and **222** move or ride along the ribs **214** and **216**. The ribs **214** and **216** act as guides for keeping the first movable stopper member **218** centered within the tubular member **202**. The musical instrument **200** also has a second movable stopper member **226** having a first indentation **228**, a second indentation **230**, and a rod **232** connected to the second movable stopper member **226**. The second movable stopper member **226** and the rod **232** are adapted for movement within the tubular member **202** between the inlet end **204** and the circumferential lip **208**. The indentations **228** and **230** move or ride along the ribs **214** and **216**. The ribs **214** and **216** act as guides for keeping the second movable stopper member **226** centered within the tubular member **202**. The first movable stopper member **218** has a thickness and the second movable stopper member **226** has a thickness and the thickness of the second movable stopper member **226** is greater than the thickness of the first movable stopper member **218**. The difference in thicknesses allows different sounding notes to be played with the first movable stopper member **218** compared to the second movable stopper member **226**. For example, lower sounding or bass notes may be played with the second movable stopper member **226** as compared to the first movable stopper member **218**. Also, it is possible that the rod **232** may be longer than the rod **224**. This provides better control of the second movable stopper member **226**.

The musical instrument **200** may be operated or played by blowing air into the inlet end **204** and moving the first movable stopper member **218** or the second movable stopper member **226** in an up and down fashion. The first movable stopper member **218** or the second movable stopper member **226** may be moved relative to the tubular member **202** while a player is blowing air by or into the inlet end **204** to produce a musical note. By holding the rod **224** to move the first movable stopper member **218** within the tubular member **202** various musical notes may be generated or produced. Also, a player of the musical instrument **200** may quickly remove the first movable stopper member **218** and replace it with the second movable stopper member **226** during a performance when other sounding notes are desired. The circumferential lip **208** acts as a stop to prevent the first movable stopper member **218** or the second movable stopper member **226** from being removed from the tubular member **202** through the outlet end **206**. As can be appreciated, another hand may be used to hold the tubular member **202** about the exterior surface **210** during use of the musical instrument **200**.

FIG. **10** illustrates another embodiment of a musical instrument **300** constructed according to the present disclosure. The musical instrument **300** comprises an outer tubular member **302** having an inlet end **304**, an outlet end **306**, an exterior surface **308** having an outer circumferential rib **310**, and an interior surface **312**. The outer circumferential rib **310** is adapted to be grasped by an individual playing the musical instrument **300**. Although the rib **310** is shown, it is also possible that the exterior surface **308** may not include the rib **310**. An inner tubular member **314** has a top end **316** having a stopper member **318**, an exterior surface **320**, and a lower end **322**. The inner tubular member **314** is adapted to fit within the outer tubular member **302** and the inner tubular member **314** may be moved relative to the outer tubular member **302**. The stopper member **318** is wider than the tubular member **314** and this prevents air from passing from the inlet end **304** through the outer tubular member **302** and out the outlet end **306**. In this manner, air is contained within the outer tubular member **302** between the inlet end **304** and the stopper member **318**. The stopper member **318** may be formed of any material, such as rubber, plastic, or felt, that allows the stopper member **318** to slide within the

outer tubular member **302** while at the same time preventing air from escaping through the outlet end **306**.

The musical instrument **300** may be operated or played by blowing air into the inlet end **304** and moving the inner tubular member **314** and the stopper member **318** in an up and down motion. The stopper member **318** may be moved relative to the outer tubular member **302** while a player is blowing air by or into the inlet end **304** to produce a musical note. By grasping the inner tubular member **314** to move the stopper member **318** within the outer tubular member **302** various musical notes may be generated or produced. One hand may be used to hold the outer tubular member **302** at the outer circumferential rib **310** during use of the musical instrument **300**. The stopper member **318** is frictionally engaged with the interior surface **312** of the outer tubular member **302**. Although not shown, it is possible that the outer tubular member **302** may have a circumferential lip at the outlet end **306** to hold the stopper member **318** and the inner tubular member **324** within the outer tubular member **302**. If it further contemplated that one or more ribs may be provided along the interior surface **312** of the outer tubular member **302**.

Preferably, the musical instruments **10**, **100**, **200**, and **300** will be constructed of a relatively lightweight material so that it can be easily handled and played. By way of example only, the musical instruments **10**, **100**, **200**, and **300** may be constructed of a tubing such as PVC (polyvinyl chloride) tubing, plastic, wood, metal, polymer clay, plastic, glass, carbon fiber, or ceramic. The tubular members **12**, **102**, **202**, **302**, and **314** may be straight to facilitate a smooth motion when moving the stopper members **26**, **118**, **218**, **226**, and **318** within the members **12**, **102**, **202**, and **302** respectively. Although the tubular members **12**, **102**, **202**, **302**, and **314** have been depicted having a circular cross-section, it is also possible that the cross-sections may take on other shapes. Again, by way of example only, an oval cross-section, an egg shaped cross-section, or a rectangular cross-section may be used. It is also contemplated that the tubular members **12**, **102**, **202**, **302**, and **314** may be clear, colored, or have a pattern or a logo printed thereon or incorporated therein. As can be appreciated, the other elements, such as the movable stopper members **26**, **118**, **218**, **226**, and **318** may also be clear, colored, or have a pattern or logo printed thereon or incorporated therein.

From all that has been said, it will be clear that there has thus been shown and described herein a musical instrument which fulfills the various objects and advantages sought therefor. It will be apparent to those skilled in the art, however, that many changes, modifications, variations, and other uses and applications of the subject musical instrument are possible and contemplated. All changes, modifications, variations, and other uses and applications which do not depart from the spirit and scope of the disclosure are deemed to be covered by the disclosure, which is limited only by the claims which follow.

What is claimed is:

1. A musical instrument comprising:

a tubular member having an inlet end, an outlet end having a circumferential lip, an exterior surface; and an interior surface having a rib; and

a movable stopper member having an indentation and a rod connected to the movable stopper member, the movable stopper member and the rod for insertion within the tubular member and the movable stopper member movable between the inlet end and the circumferential lip of the tubular member along the rib.

2. The musical instrument of claim **1** wherein tubular member has a length and the rod has a length with the length of the rod being greater than the length of the tubular member.

3. The musical instrument of claim **1** wherein the indentation is adapted to fit around the rib.

4. The musical instrument of claim **1** wherein the rib has a length that spans between the inlet end and the circumferential lip.

5. The musical instrument of claim **1** wherein the circumferential lip has a circular opening and the rod is adapted to fit through the circular opening.

6. The musical instrument of claim **1** wherein the movable stopper member has a length and the tubular member has a length and the length of the movable stopper member is less than the length of the tubular member.

7. A musical instrument comprising:

a tubular member having an inlet end, an outlet end having a circumferential lip, an exterior surface; and an interior surface having a first rib and a second rib; and

a movable stopper member having a first indentation, a second indentation, and a rod connected to the movable stopper member, the movable stopper member and the rod for insertion within the tubular member and the movable stopper member movable between the inlet end and the circumferential lip of the tubular member along the first rib and the second rib.

8. The musical instrument of claim **7** wherein the movable stopper member has a flat upper surface.

9. The musical instrument of claim **7** wherein tubular member has a length and the rod has a length with the length of the rod being greater than the length of the tubular member.

10. The musical instrument of claim **7** wherein the first indentation is adapted to fit around the first rib and the second indentation is adapted to fit around the second rib.

11. The musical instrument of claim **7** wherein the first rib has a length that spans between the inlet end and the circumferential lip.

12. The musical instrument of claim **7** wherein the circumferential lip has a circular opening and the rod is adapted to fit through the circular opening.

13. The musical instrument of claim **7** wherein the movable stopper member has a length and the tubular member has a length and the length of the movable stopper member is less than the length of the tubular member.

14. The musical instrument of claim **7** wherein the tubular member has a diameter and the movable stopper member has a diameter with the diameter of the tubular member being greater than the diameter of the movable stopper member.

15. The musical instrument of claim **7** wherein the second rib has a length that spans between the inlet end and the circumferential lip.

16. A musical instrument comprising:

an outer tubular member having an inlet end, an outlet end, an exterior surface, and an interior surface; and

an inner tubular member having a top end having a stopper member, an exterior surface, and a lower end, with the inner tubular member being inserted into the outer tubular member and the inner tubular member and the stopper member being movable relative to the outer tubular member and wider than the inner tubular member to prevent air from passing from the inlet end through the outer tubular member and out the outlet end.

17. The musical instrument of claim **16** wherein the movable stopper member frictionally engages the interior surface of the outer tubular member.

18. The musical instrument of claim **16** wherein the stopper member is formed of a material that allows the stopper member to slide within the outer tubular member and prevents air from escaping through the outlet end.

19. The musical instrument of claim **16** further comprising an outer circumferential rib on the exterior surface.

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